California Energy Commission

STAFF REPORT

LOCALIZED HEALTH IMPACTS REPORT

For Selected Projects Awarded Funding Through the Alternative and Renewable Fuel and Vehicle Technology Program Under Solicitation GFO-17-605 – California Air District Natural Gas Vehicles Solicitation

California Energy Commission

Edmund G. Brown Jr., Governor

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ABSTRACT

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007) created the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). This statute, amended by Assembly Bill 109 (Núñez, Chapter 313, Statutes of 2008), authorizes the California Energy Commission to "develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies." Assembly Bill 8 (Perea, Chapter 401, Statutes of 2013) reauthorizes the ARFVTP through January 1, 2024.

AB 118 also directs the California Air Resources Board (CARB) to develop guidelines to ensure air quality improvements. The CARB Air Quality Improvement Program (AQIP) Guidelines, approved in 2008, are published in the *California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1, AB 118 Air Quality Guidelines for the Alternative and Renewable Fuel and Vehicle Technology Program and the AQIP*. The AQIP Guidelines require the California Energy Commission, as the funding agency, to analyze the localized health impacts of ARFVTP-funded projects that require a permit (13 CCR § 2343). As provided by 13 CCR § 2343, this Localized Health Impacts Report is required to be available for public comment for 30 days prior to the approval of projects.

This *Localized Health Impacts Report* analyzes the combined impacts in the communities, including exposure to air contaminants or localized air contaminants, or both, and including, but not limited to, communities of minority populations or low-income populations, as declared by the project proposers or as determined by Energy Commission staff. Appendix A, Localized Health Impact Report Assessment Method, describes the analysis used for this *Localized Health Impacts Report.*

Keywords: Air pollution**,** air quality, Air Quality Improvement Program (AQIP), Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP), California Air Resources Board (CARB), Assembly Bill (AB) 118, California Environmental Quality Act (CEQA), criteria emissions, demographics, environmental justice (EJ) indicators, Environmental Justice Screening Method (EJSM), greenhouse gas emissions (GHG), localized health impacts (LHI)

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EXECUTIVE SUMMARY

Under the *California Code of Regulations Title 13, (CCR § 2343),* this Localized Health Impacts Report describes the alternative fuel demonstration projects proposed for Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) funding that may or may not require a conditional or discretionary permit or environmental review, such as conditional use permits, air quality permits, wastewater permits, hazardous waste disposal permits, and other land-use entitlements. This report does not include projects that require only residential building permits, mechanical/electrical permits, or fire/workplace safety permits, as these are determined to have no likely impact on the environment.

The California Energy Commission is required to assess the localized health impacts of the projects proposed for ARFVTP funding. This Localized Health Impacts Report focuses on the potential impacts projects may or may not have on a particular community, particularly those communities that are considered especially vulnerable to emissions increases. For high-risk communities, this report assesses the impacts from criteria emissions/air toxics and the air quality attainment status.

Environmental justice communities, low-income communities, and minority communities are considered to be the most impacted by any project that could result in increased criteria and toxic air pollutants within an area because these communities typically have the most significant exposure to the emissions. Assessing projects and the communities surrounding them is important because of the health risks associated with these pollutants. Preventing health issues from air pollution in any community is important, but it is especially important to minimize any negative impacts in communities that are already considered to be at risk due to their continued exposure to these contaminants.

The California Energy Commission proposes to fund two projects under Grant Solicitation GFO-17-605. The proposed projects will offer grants to California air districts to fund their existing or planned incentive programs for compressed natural gas vehicles.

The projects in this Localized Health Impacts Report are assessed for potential health impacts for the communities in which they will be located. Based on this analysis, it is not anticipated that implementing these projects will have negative impacts because there will not be a net increase in criteria and toxic emissions, specifically in those communities that are considered most vulnerable. Potentially, the projects stand to provide improved quality of life through cleaner air.

CHAPTER 1:
Projects Proposed for Funding

On January 26, 2018, the California Energy Commission released a competitive grant funding opportunity titled "California Air District Natural Gas Vehicles Solicitation" (GFO-17-605) under the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). This grant opportunity was an offer of funds for California air districts to fund their existing or planned incentive programs for compressed natural gas (CNG) vehicles.

On April 5, 2018, the Energy Commission posted the notice of proposed awards (NOPA) for GFO-17-605, resulting in two projects proposed for funding. This Localized Health Impacts Report assesses and reports on the potential localized health impacts of the proposed projects with public review and comment for a 30-day period.

This chapter summarizes the projects proposed for Energy Commission funding. Table 1 provides the applicant, project name, project area, and environmental justice (EJ) indicators. (See Appendix A.)

Table 1: Proposed Projects for California Air District Natural Gas Vehicles With Environmental Justice Indicators

Applicant	Project Name	Project Area	EJ Indicator(s)
San Joaquin Valley Unified Air Pollution Control District	CNG Truck Voucher Project	The San Joaquin Valley Air Pollution Control District: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare Counties and a portion of Kern County.	Poverty, Unemployment, Minority, and Age
South Coast Air Quality Management District	Expanded Deployment of Near-Zero-Emission Heavy-Duty on-Road Natural Gas Trucks for Goods Movement and Port Drayage Applications in the South Coast Air Basin	The South Coast Air Basin: portions of Los Angeles, Riverside, and San Bernardino Counties and all of Orange County	Poverty, Unemployment, Minority, and Age

Source: California Energy Commission staff

Project Descriptions

San Joaquin Valley Unified Air Pollution Control District – CNG Truck Voucher Project

The San Joaquin Valley Unified Air Pollution Control District (District) is proposing to replace Classes 4-8 on-road heavy-duty diesel trucks with new CNG trucks installed with engines certified to meet the ultra-low oxides of nitrogen (NO_x) engine emission standards of 0.02 g/bhp-hr (grams per brake horsepower-hour) NO_x and 0.01 g/bhp-hr particular matter (PM). The district intends to expand its current truck voucher program to include the replacement of 2010-compliant trucks with the CNG trucks installed with the ultra-low-NO_x engines. Replacement trucks will be funded up to $100,000 per vehicle, which is an increase from the current maximum incentive. This will provide for additional emission reductions beyond the California Air Resources Board (CARB) Truck and Bus Regulation.

Trucks targeted for funding will typically be owned by companies located in California that are transporting products within the San Joaquin Valley to local businesses and homes. These trucks contribute to a variety of vocational applications that involve long-haul transport and local delivery. Each replacement truck will be of similar type, gross vehicle weight rating, and horsepower rating as the old truck. Due to the CARB Truck and Bus Regulation, the district will target trucks that meet 2010 emission standards to maximize the project life of the new vehicles and ensure surplus emission reductions.

South Coast Air Quality Management District – Expanded Deployment of Near-Zero-Emission Heavy-Duty On-Road Natural Gas Trucks for Goods Movement and Port Drayage Applications in the South Coast Air Basin

The proposed project seeks to extend an existing incentive program designed to deploy near-zero-emission natural gas trucks in place of older diesel trucks. All funds for the proposed truck replacement program will be used to replace Classes 7 and 8 heavy-duty diesel trucks with 2009 and older engines. At a minimum, this program will result in each new truck emitting 90 percent less NO_x (based on mass emission rate) than the truck it replaces. In addition, emissions of diesel PM will be eliminated. The new trucks will also emit lower masses of other criteria pollutants. There will be no net increase in the amount of material delivered to any "project site" (assumed to be the place where each new truck will be housed and where the old truck was formerly housed). In most cases, natural gas fuel will be delivered by pipeline and compressed at the site using electric compressor systems. This proposed project will help reduce the number of trips by heavy-duty tanker trucks to diesel fueling stations in the South Coast Air Basin, proportional to the diesel volume that nearly 140 diesel trucks currently consume.

CHAPTER 2: Approach

Under the *California Code of Regulations Title 13, (CCR § 2343),* this Localized Health Impacts Report (LHI Report) describes the California Air District Natural Gas Vehicles projects proposed for ARFVTP funding that may or may not require a conditional or discretionary permit or environmental review, such as conditional use permits, air quality permits, wastewater permits, hazardous waste disposal permits, and other land-use entitlements. This report does not include projects that require only residential building permits, mechanical/electrical permits, or fire/workplace safety permits, as these are determined to have no likely impact on the environment.

For this LHI Report, the Energy Commission interprets "permits" to connote discretionary and conditional use permits because they require a review of potential impacts to a community and the environment before issuance. Since ministerial-level permits, such as building permits, do not assess public health-related pollutants, the Energy Commission staff does not assess projects requiring only ministerial level permits in this report.

The LHI Report Assessment Method in Appendix A assesses communities potentially impacted by air pollution and possibly benefitted by a natural gas vehicle incentive program. The California Air Resources Board's (CARB) *Proposed Screening Method for Low-Income Communities Highly Impacted by Air Pollution for Assembly Bill (AB) 32 Assessments* is also used to integrate data to identify low-income communities that are highly impacted by air pollution.[1] Other resources used in this assessment are the *California Infrastructure State Implementation Plans,*[2] which contain publicly noticed air quality attainment plans, and the *Green Book Nonattainment Areas for Criteria Pollutants.*[3]

The counties where the proposed projects (incentive-funded vehicles) will be located are all in nonattainment zones for ozone, PM[4] 2.5 and PM 10. Table 1 shows the EJ indicators for the projects, that is, minority populations, low incomes, and highly sensitive groups based on age (individuals younger than 5 years of age and older than 65 years of age). Table 2 shows the demographics. All counties possibly affected by the proposed incentive projects are classified as high risk, according to the Environmental Justice Screening Method (EJSM), with the exception of Orange County, which is not classified as high risk.

1 California Air Resources Board, *Proposed Screening Method for Low-Income Communities Highly Impacted by Air Pollution, 2010* (Sacramento, California).
2 http://www.arb.ca.gov/planning/sip/sip.htm.
3 http://www.epa.gov/oaqps001/greenbk.
4 "Particulate matter" is unburned fuel particles that form smoke or soot and stick to lung tissue when inhaled, and is a chief component of exhaust emissions from heavy-duty diesel engines.

Staff collected information about predicted emissions for the project proposal. Activities conducted are not expected to have significant impact on emissions.

Table 2: Environmental Justice (EJ) Indicators Compared With California

Yellow highlighted areas indicate numbers (percentages) that meet the definition for EJ indicators.

	Number of EJ Indicators by Category	Below Poverty Level (2012-2016)	Black Persons (2010)	American Indian and/or Alaska Native (2010)	Asian and/or Pacific Islander (2010)	Persons of Hispanic or Latino Origin (2010)	Persons Under 5 Years of Age (2010)	Persons Over 65 Years of Age (2010)	Unemployment Rate (February 2018)
California		**14.3%**	**6.2%**	**1.0%**	**13.0%**	**37.6%**	**6.8%**	**11.4%**	**4.3%**
Counties:		**>14.3%**	**>30%**	**>30%**	**>30%**	**>30%**	**>8.16%**	**>13.8%**	**>4.3%**
Fresno	4	26.9%	5.3%	1.7%	9.6%	50.3%	8.5%	10.0%	8.7%
Kern	4	23.1%	5.8%	1.5%	4.2%	49.2%	8.7%	9.0%	9.2%
Kings	4	21.6%	7.2%	1.7%	3.7%	50.9%	8.4%	7.9%	9.0%
Los Angeles	3	17.8%	8.7%	0.7%	13.7%	47.7%	6.6%	10.9%	4.7%
Madera	3	22.1%	3.7%	2.7%	1.9%	53.7%	7.9%	11.4%	8.0%
Merced	4	24.2%	1.4%	1.4%	7.4%	54.9%	8.7%	9.4%	9.9%
Orange	1	12.5%	1.7%	0.6%	17.9%	33.7%	7.4%	5.0%	3.1%
Riverside	3	16.5%	6.4%	1.1%	6.0%	45.5%	6.4%	5.3%	4.7%
San Bernardino	3	19.1%	8.9%	1.1%	6.3%	49.2%	7.8%	3.9%	4.3%
San Joaquin	3	17.8%	7.6%	1.1%	14.4%	38.9%	7.9%	4.5%	7.0%
Stanislaus	3	18.2%	2.9%	1.1%	5.1%	41.9%	7.7%	6.1%	7.4%
Tulare	4	28.3%	1.6%	1.6%	3.4%	60.6%	9.3%	4.2%	10.9%

Sources: Unemployment information from the State of California, Employee Development Department Labor Market Information Div.: http://www.labormarketinfo.edd.ca.gov/data/unemployment-and-labor-force.html#Tool. U.S. Census Bureau, http://www.census.gov/quickfacts/table/PST045215/0664000,06,00 and http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml

CHAPTER 3:
Summary

If funded, the proposed projects (incentive programs) would result in expanding and expediting the existing or planned deployment of ultra-low-NO_x vehicles in California, which will help achieve both energy and climate change goals. As ultra-low-NO_x vehicles displace gasoline and diesel vehicles, tailpipe pollutants will decrease significantly, especially in critical areas of the state such as the San Joaquin Valley and the South Coast Air Basin.

The anticipated impacts to the communities where the incentive programs would exist are positive in terms of air quality and anticipated greenhouse gas reductions.

As indicated in Table 1, with detail in Table 2, 11 counties are classified high-risk communities, as identified in Appendix A. The demographic data presented in this LHI indicate higher concentrations of minority populations, especially Hispanic, along with children under 5, and those with low incomes and/or facing high employment. The anticipated health benefits from the proposed projects for the people in these communities, especially the disadvantaged communities, is highly likely, if not certain, to be positive.

CHAPTER 4:
Acronyms

Air Quality Improvement Program (AQIP)

Air Resources Board (CARB)

Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP)

Assembly Bill (AB)

California Code of Regulations (CCR)

California Environmental Quality Act (CEQA)

Compressed natural gas (CNG)

Environmental justice (EJ)

Environmental Justice Screening Method (EJSM)

Grant funding opportunity (GFO)

Greenhouse gas (GHG)

Localized health impact (LHI)

Notice of proposed awards (NOPA)

Oxide of nitrogen (NOx)

Particulate matter (PM)

San Joaquin Valley Unified Air Pollution Control District (District)

State Implementation Plan (SIP)

APPENDIX A:
Localized Health Impact Report Assessment Method

This LHI Report assesses the potential impacts to communities because of the projects proposed by the ARFVTP. This report is prepared under the *California CARB AQIP Guidelines, California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1 (CCR § 2343)*:

"(6) Localized health impacts must be considered when selecting projects for funding. The funding agency must consider environmental justice consistent with state law and complete the following:

> (A) For each fiscal year, the funding agency must publish a staff report for review and comment by the public at least 30 calendar days prior to approval of projects. The report must analyze the aggregate locations of the funded projects, analyze the impacts in communities with the most significant exposure to air contaminants or localized air contaminants, or both, including, but not limited to, communities of minority populations or low-income populations, and identify agency outreach to community groups and other affected stakeholders.
>
> (B) Projects must be selected and approved for funding in a publicly noticed meeting."

This LHI Report is not intended to be a detailed environmental health impact analysis of proposed projects nor is it intended to substitute for the environmental review conducted during the California Environmental Quality Act (CEQA) review. This LHI Report includes staff's application of the Environmental Justice Screening Method (EJSM) to identify projects located in areas with social vulnerability indicators and the greatest exposure to air pollution and associated health risks.[5]

The EJSM was developed to identify low-income communities highly affected by air pollution for assessing the impacts of climate change regulations, specifically Assembly Bill 32 (Núñez, Chapter 488, Statutes of 2006), the California Global Warming Solutions Act of 2006. The EJSM integrates data on (i.) exposure to air pollution, (ii.) cancer risk, (iii.) ozone concentration, (iv.) frequency of high ozone days, (v.) race/ethnicity, (vi.) poverty level, (vii.) home ownership, (viii.) median household value, (ix.) educational attainment, and (x.) sensitive populations (populations under 5 years of age or over 65 years of age).

5 California Air Resources Board (ARB). *Air Pollution and Environmental Justice, Integrating Indicators of Cumulative Impact and Socio-Economic Vulnerability Into Regulatory Decision-Making, 2010.* (Sacramento, California) Contract authors: Manuel Pastor Jr., Ph.D., Rachel Morello-Frosch, Ph.D., and James Sadd, Ph.D.

To determine high-risk communities, environmental justice (EJ) indicators for locations of natural gas vehicle incentive projects are compared to data from the U.S. Census Bureau or other public agency. Staff identifies high-risk communities by using a two-part standard. For a community to be considered high risk, for this assessment, it must meet both Parts 1 and 2 of this standard.

Part 1:

- Communities located in nonattainment air basins for ozone, PM 2.5 or PM 10

Part 2:

- Communities having more than one of the following EJ indicators: (1) minority, (2) poverty, (3) unemployment and (4) high percentage of population under 5 years of age and over 65 years of age. The EJ indicators follow:
    - A minority subset represents more than 30 percent of a given city's population.
    - A city's poverty level exceeds California's poverty level.
    - A city's unemployment rate exceeds California's unemployment rate.
    - The percentage of people living in that city are younger than 5 years of age or older than 65 years of age is 20 percent higher than the average percentage of persons under 5 years of age or over 65 years of age for all of California.